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ABSTRACT

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TRANSFORMATIONAL GRAMMAR
and
WRITING IMPROVEMENT

Paper delivered at the
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ABSTRACT

Transformational Grammar and Writing Improvement

Though a general study of transformational grammar does not improve writing ability, students can learn to use transformational operations which combine and reduce clauses to make better sentences. Since students already know intuitively how to do the operations, transformational theory in the classroom is largely limited to sentence-combining exercises, and makes no use of detailed analytical procedures. This paper demonstrates the varying complexity of typical combining exercises and then discusses their actual classroom use. In two eleventh-grade high school English classes, the same assignments were given, but the experimental class received instruction in sentence combining while the control class was taught in the traditional manner. A comparison of the compositions written by members of each class reveals a dramatic increase in "syntactic fluency" by the experimental group after only one semester of instruction.

William P. Bivens, III

Allan B. Edwards

The limited extent to which many students improve their writing by taking composition courses can be blamed on a failure to recognize that systematic revision is the essential skill necessary to write good prose. While the instructor may direct the student to revise vague passages or to re-arrange illogical paragraphs, many students are utterly helpless before this task--they simply do not know how to make the suggested changes. In personal consultation, the instructor can usually help the student rework his prose, but not in a way systematic enough that techniques for rewriting previous assignments can be applied to new compositions. Until students have some method of revision generally applicable to improving each assignment they write in the future, the whole enterprise will remain opaque to them. Moreover, markings on student papers frequently suggest that major portions of what the student has written are unsatisfactory, and those passages must be scrapped and begun afresh. While some students do entirely miss the mark on their first try, most turn out a skeleton of material which they can revise and expand into a good essay. What is needed, therefore, is a quantitative measure of success by means of which students and instructors can recognize usable material and systematically improve it through revision.

Robert Zoellner clarifies the type of learning necessary for a successful course in composition in "Talk-Write: A Behavioral Pedagogy for Composition" (College English, 30: 267-320). From his investigations of the role of operant learning

in teaching composition, he concludes: ". . . the greatest weakness of current compositional pedagogy, [is] the almost total lack of intermediate of sub-specifications to bridge the often enormous gap between the student's actual scribal capacities and the invisible archetype at which we wish him to aim" (p. 301). To bridge this gap, Zoellner focuses on the task of revision, the essential skill which behavioral psychology can clarify in terms of purpose by providing criteria for evaluating any method of improving composition. This revision must be immediate and tangible, in order to make re-inforcement, and thus learning, possible. It must be capable of showing quantitative improvement instead of simply providing binary evaluation ("right" or "wrong"). Finally, it must clearly outline the ultimate goal of "good writing" and provide a systematic means of relating comments on previous assignments to the immediate task of writing this week's paper. What is needed, in summary, is a model for revision, one which provides a continuous stream of quantitative evaluation which will let the student know when his work is getting better.

Applied transformational grammar focuses on precisely those aspects of the writing process which are necessary to accomplish these goals. If taught correctly, a small repertory of transformations can re-inforce processes which students know intuitively as native speakers of the language and make them available as consciously manipulable resources for improving composition.

For students to learn to revise their prose systematically, two skills are necessary. They must learn to combine simple

sentences by means of systematic transformational processes in order to form the complex syntactic structures which mark mature prose. Second, they must learn to expand the sentences they write in their own essays in order to find the underlying kernels which can then be recombined transformationally in ways which make the prose more precise and which more accurately communicate their ideas. This afternoon we would like to focus on the first, most basic, of these two skills, explaining the grammar of sentence combining operations and reporting our results in using this method to teach writing to a class of advanced juniors at the high school level. These results will, we hope, illustrate the dramatic improvement which can be obtained in a relatively short period of time using this method. Beginning with Walter Loban's The Language of Elementary School Children and Kellogg W. Hunt's Grammatical Structures Written at Three Grade Levels, a series of NCTE Research Reports (Numbers 1, 3, 6, 8, and 10) has shown that the writing maturity for which composition teachers strive can be explained in terms of a few grammatical transformations. In essence, these operations produce complex sentences by combining short sentences and reducing the redundant syntactic material. This process has two results in student writing. First, since it eliminates redundancy, it gives brevity and conciseness to the prose. Second, it increases the range of stylistic choice available to the student--sentences can be combined and reduced in a variety of ways. By carefully arranging the ideas contained in the resulting subordinate structures, grammatical rank can reflect the logic of the exposition. That students can learn

the processes and develop some skill with their stylistic implications has been shown by Donald R. Bateman and Frank J. Zidonis, The Effect of a Study of Transformational Grammar on the Writing of Ninth and Tenth Graders and John C. Mellon, Transformational Sentence Combining: A Method for Enhancing the Development of Syntactic Fluency in English.

The advantage of a transformational approach to instruction in composition will be lost if the instructor spends too much class time on the grammar itself and too little on the applications to the students' problems. Obviously, the fine points of linguistic theory and methodology are irrelevant to the task, and the instructor need not be bothered with motivating rules or arguing about their precise and accurate formulation. Instead, he should discuss sentence structure to the extent that intuitive evidence may be brought to bear and to the extent that the students can be convinced that sentences are made up of constituents which can be moved intact. Students manipulate these constituents in their speech all the time, and thus can identify them intuitively. All the instructor needs to do is to help his students realize noun-phrases, verb-phrases, and smaller elements of phrase structure as units which can be manipulated to produce consciously structured, logical prose. Immediate constituent analysis works well here, and the instructor can ask his class to begin cutting sentences into their objects, etc. Tree diagrams provide a helpful record of these cuts if the relationship between cutting and placing on branches of the tree is made plain. The instructor must be careful, of course, that he does not bog down in an attempt to define these constituents--his

approach must at all times be functional, never substantive. Anything which can serve as the subject of a sentence, for example, is somehow related to a noun-phrase. This functional approach to syntactic structure allows easy explanation of infinitives, gerunds, and that-clauses which serve as subjects of sentences and look nothing like the more common noun-phrase subjects.

Having examined sentence constituents, the instructor can turn his attention to their manipulation by transformation. My own experience shows that students quickly grasp interrogative and passive transformations. By practicing such permutations, they come to realize the possibility of restructuring sentences, and if well taught, the stylistic implications of alternate constructions. The passive is especially important because of its great frequency in student writing as a means of eliminating agency from their sentences. Classroom explanations of these transformational operations introduce important notions such as the deletion of the deep-structure auxiliary do in non-interrogative, active sentences, and the generation of be in passives. With the aid of such demonstration, students can easily realize that some abstract structure underlies the surface structures they speak and write. With such a basis, more abstract operations can be illustrated and practiced using transformational sentence combining exercises, such as the deletion of the copula be to form appositive structures and other operations which produce complex noun phrases, relative clause transformations including their formation and reduction, and certain semantic-syntactic relationships such as the verb

have and possessive structures. Incidentally, it is crucial that the inherent identity relationships between relative pronouns and head noun phrases be made clear as the basis for embedding.

The following sample exercise illustrates the use of these transformations and their relationship to the sentence combining approach.

- 1) The Allies seemed on the brink of defeat in early 1942.
- 2) Winston Churchill refused to be disheartened.
- 3) Winston Churchill was the great English War Prime Minister.

In this simple example, deletion of was gives an appositive structure from the two remaining noun-phrases which can then be used as the subject for Sentence 2. The choice of Sentence 2 as the kernel involves the same indication of logic discussed above. In a paper on the war itself or the Allied position during the war, Sentence 1 would have been chosen as the kernel. Since this idea was not chosen, it is subordinated by means of a logical connective expressing its relation to the main idea embodied in the kernel and attached as a subordinate clause. The resulting sentence, therefore, is:

Winston Churchill, the great English War Prime Minister, refused to be disheartened when the Allies seemed on the brink of defeat in early 1942.

A second group of sentences illustrates more complicated combinations, which the student would be lost to make without some knowledge of basic transformational relationships:

- 1) The urban renewal proponents often have had no experience with slum life.
- 2) Most of the urban renewal proponents are well-meaning people.

3) Slum life has its own peculiar set of mores.

Deletion of V_{be} in Sentence 2 gives an appositive structure which may be used as the subject of the revised sentence in the manner illustrated in the preceeding example. Closer examination of the two head-nouns of this appositive structure reveals that people is simply a type of expletive for the more meaningful proponents. Grammatically, it simply supplies a noun to carry the adjective well-meaning. What is needed, therefore, is some means of attaching this adjective to proponents. A useful transformation affecting adjectives and nouns permutes the preposed adjective (here urban renewal) to a position after the head noun and attaches it by means of a preposition (here of). The constraints on this type of operation are intuitive and every student will already know that he cannot say "proponents of well-meaning" and that "proponents of urban renewal" is acceptable. With urban renewal in post-nominal position, the pre-nominal position is open to the adjective well-meaning. The subject of the sentence, therefore, is "The well-meaning proponents of urban renewal" This noun-phrase contains all the information of Sentence 2 except the quantifying phrase most of, which is simply a way of avoiding making the statement too definitive. Students often hesitate to make very direct statements even though this quality of definiteness is often ironically one for which the instructor is striving. Such qualification, however, reveals the same logic as often in Sentence 1, and most of may be just deleted. If it is objected that often modifies the number of people who have had experience with slum life and most of refers to the number of well-meaning

people, then a different set of transformations is necessary which will subordinate Sentence 2 with while and attach it to Sentence 1, substituting they for the repetitious subject:

While most proponents of urban renewal are well-meaning people, they often have had no experience with slum life. Whichever choice is made, the only task remaining is to incorporate Sentence 3. The key transformation here is the one which derives possessives from underlying sentences containing V_{have}. For example, John has five dollars may be transformed into John's five dollars. An alternate formulation of possessives can be expressed as slum life's peculiar set of mores. It should be plain that this reduced sentence is really the particular aspect of slum life which is important to Sentence 1. Thus it may be substituted for the more general object of the preposition with to give the following completed sentence:

The well-meaning proponents of urban renewal often have had no experience with slum life's peculiar mores.

During the first semester of the 1973-74 academic year, we conducted experimental classes at a local high school in order to demonstrate the effectiveness of the sentence-combining approach. The remainder of our paper presents an outline of our method and some preliminary analyses of our results.

Purpose of the Study

The extent to which students at Arcata High School have improved their overall composition skills for the past four years, as determined by SAT and ACT test score results, has been insignificant, for they continue to exhibit below average results on statewide examinations. This fact could be due to the emphasis the English Department places on the study of literature, vocabulary, and media. Of the thirteen goals outlined for student objectives, only two deal specifically with composition. Another explanation for the general absence of significant composition improvement could be due to the approach to the instruction of composition employed at the school.

In general the English Department's approach to composition instruction has been pragmatic: "If it works, use it." While this liberal attitude offers the teacher abundant opportunity for innovating, it also invites confusion and inconsistency which reduce a student's potential writing skill. Without a consistent program within the department, a student stands a chance of completing four years of high school without ever learning how to construct basic sentences or how to use them in writing. It is because of the possibility of this danger that a study was undertaken to determine to what extent the use of transformational grammar as a method for composition instruction is more or less successful than are the individual methods now being employed.

Prodecure for the Study

Two advanced junior literature and composition classes were chosen for the study. Both instructors are successful, experienced teachers. There was no known difference between the mean intelligence levels of either the control or experimental group students. Both groups began and completed the course at the same time. No information concerning this study was released to either of the groups.

On the first day of class, both teachers required the students to write a short "essay" on "The most significant event in your life." This paper was then used as a basis for comparison with the final piece of writing which both teachers gave as identical assignments during the last week of the term. Students were asked to write a descriptive paragraph about a picture of an event or a person. This paper was then analyzed and compared to the first paper written at the beginning of the term.

The results of the control papers were compared with the results of the experimental papers to determine what, if any, improvements were made by both groups, as well as to determine if significant difference between the two groups was evident. The results of this comparison are presented in the appended tables.

Instructional Methods Used With Experimental Group

The nature of the course (Eleventh Grade Literature and Composition) did not lend itself well to the teaching of transformational grammar because the measurable objectives established for the course by the English Department placed an emphasis on vocabulary, spelling, and literature. Due to the obligation to meet these measurable objectives, of the five class hours per week only one hour could be devoted to the teaching of transformational grammar.

The method used for teaching the grammar was not our own. New Dimensions in English I by Harold B. Allen, Verna L. Newsome and Enola Borgh (McCormick-Mathers Publishing Company, Cincinnati, Ohio, 1968) was the book from which the content information about sentence structure was taken. Instruction was based on units one, two, and three (kernel sentences, transformed sentences, and grammatical structures and devices respectively). Adherence to the authors' instructional suggestions and procedures was strictly observed. Exercises for practicing transformational techniques were taken from Sentence Combining, a Composition Book, by William Strong (Random House, New York, 1973).

At the beginning of each week, one or more lessons was introduced, and the students practiced the exercises both orally and in writing. Each lesson was followed up with a "sentence combining" exercise and an assignment to describe, as fully as possible in one sentence, a picture stimulus. At the end of the week, students were given a topic based on the

literature they had been reading, and were required to write an essay covering the topic. Special effort was made to incorporate the structures learned during the week. If a student's writing did not include various structures, or if it was unsatisfactorily written, he was required to rewrite the paper.

Emphasis was placed on the following grammatical devices: subordinate and relative clauses, adverbial phrases, the use of verbal adjectives, and the elimination, whenever possible, of coordinating conjunctions.

Once the students were accustomed to sentence combining, the combining exercises were used as a first paragraph stimulus, from which the students were to continue and conclude the ideas or images presented, paying close attention to continuing the style of the combined sentences. Typical results of such an exercise appear in the Appendix, "A Sample of Student Writing Progress," in the two paragraphs dated November 16, 1973. The first paragraph is a result of the stimulus and the second is the student's own work.

RESULT OF STUDY

After the term ended on January 25, the first and last pieces of writing from the control and experimental groups were collected and analyzed. For our preliminary analysis presented here, we have determined clause and T-Unit length, percentage of subordinate clauses, percentage of adjectives and other verbals, and other indices of "syntactic fluency" in accordance with the procedures used by Kellogg W. Hunt, Grammatical Structures Written at Three Grade Levels (NCTE Research Report Number 3, 1965). While we believe that writing longer sentences does not in itself make writing better, we believe that the ability to control length usually finds expression first in increased average length. Thus, this and other measures of syntactic fluency provide an indirect index of the ability to write better. The exact nature of this correspondence, however, awaits further research.

Words Per Clause

The average clause length for the control group's first papers was 7.52 words, with the range between 5.16 and 10.15 words as compared with the experimental group's average clause length of 7.64 with a range between 6.90 and 8.75 (Table I). The last papers for the control group showed an average of 7.84 words per clause (an increase of .32 words) with a range between 5.10 and 13.50 words. The average clause length for the final experimental papers was 11.17 (an increase of 3.53 words) with a range between 7.8 and 23.3 words per clause. In

terms of overall range for final papers, the control group students evidenced a loss of 4.28 words per clause to a gain of 6.36 words, whereas the experimental group showed a gain of .11 words to 16.22 words per clause (Tables I and II). These results are only preliminary and more sophisticated statistical analysis remains to be done.

Percent of Subordinate Clauses Used

The average of subordinate clauses to all clauses used in the control group's first papers was 32.9%. The range of subordinate clause usage in their first papers was between 12.5% and 48%, somewhat higher than the range of usage by the experimental group. The percent of subordinate clause usage by the latter was an average of 24.8%, with a range between 0% and 41.2% (Table I).

The percent of subordinate clause usage in the control group's final papers was 22.19%, a loss of 10.71% over their first papers. Their range was between a loss of 40% and a gain of 14.00% (Table II). The experimental group's results indicated an overall 11.32% gain in subordinate clause usage, for the group averaged a use of 36.1% subordinate clauses, with a range between a loss of 10.80% to a gain of 45.40% (Tables I and II).

Length of T-Units

The average T-unit length of the control group's first papers was 15.39 words compared with the experimental group's first papers which averaged 13.33 words per T-unit. The range of words per T-unit in the control group's first papers was from 8.95 words to 26.65 words. The range for the experimental group was from 9.08 words to 15.86 words (Table I).

The control group lost an average of 2.35 words per T-unit in their last writing. The group's average number of words per T-unit was 13.04 words with a range between 6.37 words and 19.17 words, which translates into an individual loss of 12.38 words to a gain of 5.02 words per T-unit (Table II).

The experimental group gained 6.68 words per T-unit according to their last papers, and their gain or loss over the first papers ranged from a loss of .15 words to a gain of 19.75 words per T-unit (Tables I and II).

Use of Adjectives

The use of adjectives in comparison to all other words used in the control group's first writing averaged 5.30%, with a range between 2.50% to 13.90%. This does not seem to be significantly different from the statistics gathered from the experimental group's first papers, which indicated a mean adjective usage of 6.40% (1.1% higher than the control group), with a range between 1.73% and 4.70% adjective usage (Table III).

The average gain in adjective use in the control group's writing is 3.70%, with a range between a loss of 1.40% to a gain of 12.40%, as shown by their last writing. This group was averaging a 9.00% adjective usage in their last writing.

The average adjective usage shown in the experimental group's last papers was 12.90%, a net gain of 6.50% over their first papers. The range for loss or gain of adjective use was from a loss of 3.79% to a gain of 24.20% (Table III). These statistics indicate that while the control group gained 69.8%, the experimental group boasts a 101.5% increase in the use of adjectives.

Use of Present Participles and Gerunds

The initial papers written by the control group indicated that the mean use of present participles and gerunds was .90% of the total words used, with an individual range between 0% use of these elements to a 2.8% usage. Their final papers evidenced significant gain, for the mean usage of present participles and gerunds was 3.80% with an individual range between a loss of .90% usage to a gain in usage of 4.10% (Table IV).

The experimental group's usage of present participles and gerunds in the initial papers ran higher than that of the control group, for the experimental group's mean usage was 2.4%, with a range from 0% use of these elements to an 8.7% usage. The final papers of the experimental group showed them to be using an average of 4.80% usage of present participles and gerunds, with an individual range between a loss of .45% to a gain of 10.30% (Table IV).

LIVING IN THE COUNTRY

Living in the country has changed my life a lot. I enjoy the clean atmosphere and the breath taking view of all the living sights. Its a relief to get out of the city and get some elbow room. Every member of my family worships the tranquility of the country.

The reason it changed my life is that I respect and no longer take the country for granted. I can't stand to think that the country may become a polluting city. Living is a beautiful thing and living in the country makes it worthwhile.

If you ever feel low, and have a desperate need to get out of the city, drive out to the country.

Sit back, relax and enjoy the most beautiful thing in my life--the country. It just might become the beautiful thing in your life.

Nov. 16, 1973

Sliding across the sky, blown by the north wind, it drifted down between tall, neon signs falling in white chunks crusting the street with a whisper. Cars eased through, making brown, creased parallel tracks which finally turned to an icy slush. Black, leafless, tree limbs took on a cold frosting, trudging toward buses with their coats buttoned up and their shoulders hunched; shoppers shuffled through it. Flakes which looked like dead petals fell through lights a top metal poles. The snow fell all evening, soundless, burying everything in white. The next day was still and clear.

Robert, a husky, good looking boy of fourteen, trudged along the knee-high snow, his blue eyes scanning the open meadow ahead of him. His gun, perched on his shoulder, was so cold that it could give someone frostbite.

He was searching for the animal that was to be his prey, the graceful jumping, mule deer. As he looked at the snow-covered trees he noticed a movement. His heart jumped to his throat as he thought that this could be it, his last minute being a child. He raised his gun, aiming it carefully. Then the movement in the trees came into view. He pulled the trigger back very slowly, for he didn't want to miss his prey. There it was, a beautiful four-pointed buck looking right in his direction. All he could do was stare and think, "What a gorgeous creature."

Jan. 23, 1974

The long, winding, road seemed unending. The early morning sun peeps over the crumbling buildings just enough to make disfigured, people-like shadows on the deteriorated walls. The old fattened, rodents scramble across the worn down cobblestone road, a perfect setting that would keep an adventurous child in a fantasy world.

TABLE I

Control and Experimental Group
First and Last Papers

First Papers (Control)			Last Papers (Control)			First Papers (Experimental)			Last Papers (Experimental)				
Student	Mean Clause Length	% of Sub. Clauses	Mean T-unit Length	Mean Clause Length	% of Sub. Clauses	Mean T-unit Length	Student	Mean Clause Length	% of Sub. Clauses	Mean T-unit Length	Mean Clause Length	% of Sub. Clauses	Mean T-unit Length
1.	10.15	33.3	20.30	8.95	36.9	14.36	1.	7.35	25.7	9.53	10.2	40.0	17.0
2.	9.35	25.0	18.75	5.10	20.0	6.37	2.	6.90	41.2	11.70	8.5	50.0	17.0
3.	7.15	35.5	14.60	12.001	16.7	18.60	3.	7.05	29.6	15.86	10.6	38.3	19.0
4.	5.15	41.7	10.32	8.35	36.3	15.34	4.	9.53	17.2	15.65	11.0	16.7	16.5
5.	5.50	25.0	8.95	5.63	20.0	8.35	5.	6.00	13.0	15.50	8.7	57.1	33.5
6.	8.87	25.0	25.80	7.12	17.7	15.12	6.	7.05	22.2	9.06	9.0	20.0	11.2
7.	7.70	48.0	14.85	5.90	25.4	9.70	7.	7.39	8.7	10.62	8.8	38.1	14.2
8.	7.25	40.0	15.86	13.50	00.0	16.20	8.	7.08	39.1	15.25	23.2	33.3	35.0
9.	6.67	41.6	26.65	6.40	55.6	19.17	9.	7.69	00.0	11.18	7.8	45.4	21.5
10.	6.71	35.3	11.40	8.16	8.2	12.75	10.	7.24	35.3	16.40	10.3	50.0	20.5
11.	8.00	12.5	11.62	5.12	7.2	8.12	11.	9.75	18.8	14.00	12.8	25.0	17.0
							12.	8.30	30.8	14.30	13.2	20.0	22.0
Total	82.66	262.5	169.30	86.38	244.0	143.42		91.74	257.6	160.07	134.2	433.9	241.4
Mean	7.52	32.9%	15.39	7.84	22.19%	13.04		7.64	24.8%	33.33	11.17	36.1%	20.1

TABLE II

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Individual Gain or Loss .

Control Group

Student #	words per clause	percent of subordinate clause usage	words per T-unit
1.	- 1.20	+ 3.60 %	- 6.00
2.	- 4.28	- 5.00	- 12.38
3.	+ 4.84	- 18.80	+ 3.20
4.	+ 3.20	- 5.40	+ 3.02
5.	+ .08	- 5.00	- .60
6.	- 1.75	- 7.80	- .68
7.	- 1.80	- 22.60	- 5.15
8.	+ 5.36	- 40.00	+ .34
9.	- .27	+ 14.00	- 7.48
10.	+ 1.45	- 27.10	+ 1.35
11.	- 2.79	- 5.30	- 8.50

Range: - 4.28 + 6.36 -40.00% +14.00% -12.33 +3.02

Experimental Group

Student

1.	+ 6.85	- 14.30 %	+ 3.49
2.	+ 1.60	+ 8.80	+ 5.30
3.	- 3.55	+ 8.70	+ 3.14
4.	+ 2.37	- .50	- .13
5.	+ .70	+ 28.10	+ 15.00
6.	+ 1.94	- 2.20	+ 2.12
7.	+ 1.41	+ 29.40	+ 3.58
8.	+ 16.22	- 5.80	+ 19.75
9.	+ .11	+ 45.40	+ 10.32
10.	- 3.06	+ 14.70	+ 4.10
11.	+ 4.05	+ 6.20	+ 3.00
12.	+ 4.90	- 10.80	+ 7.70

Range: +.11 +16.22 -10.80% +45.40% -.15 +19.75

TABLE III

ADJECTIVE USAGE
CONTROL GROUP

First Writing (9/12/73)

First Writing (11/18/74)

Student #	total words	# adj. used	% of total	total words	# adj. used	% of total	net gain or loss
1.	61	4	6.50	170	3	1.30	- 4.70%
2.	75	1	1.30	51	7	13.70	+ 12.40
3.	212	15	7.20	72	6	8.40	+ 1.20
4.	52	4	6.40	92	10	10.90	+ 4.50
5.	179	10	5.60	142	11	7.70	+ 2.10
6.	79	11	13.90	121	15	12.50	- 1.40
7.	193	7	3.60	165	13	7.90	+ 4.30
8.	254	9	3.50	81	10	12.30	+ 8.80
9.	80	2	2.50	115	8	5.20	+ 2.70
10.	114	7	6.10	204	25	12.70	+ 5.60
11.	128	7	5.40	73	9	12.40	+ 7.00
Totals:	1447	76	5.30	1286	116	9.00	+ 3.70

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Experimental Group

Student #	total words	# adj. used	% of total	total words	# adj. used	% of total	net gain or loss
1.	257	14	5.40	51	5	9.90	+ 4.50
2.	173	15	8.70	68	16	14.65	+ 5.95
3.	381	20	5.00	495	45	9.00	+ 4.00
4.	256	12	4.80	66	11	16.50	+ 11.70
5.	248	14	5.80	51	12	23.50	+ 18.70
6.	127	1	.77	45	4	8.90	+ 8.13
7.	170	32	18.80	184	24	14.01	- 3.79
8.	230	20	8.90	70	6	8.50	+ 1.00
9.	769	7	4.00	85	11	12.80	+ 8.80
10.	746	16	5.49	41	7	17.01	+ 10.52
11.	214	8	7.10	51	10	31.30	+ 24.20
12.	100	7	7.00	66	14	21.20	+ 14.20
Totals:	2573	165	6.40	1225	166	12.90	+ 6.50

TABLE IVa

Participle and Gerund Usage

CONTROL GROUPBEST COPY AVAILABLE

First Papers

Student #	total words	present participles and gerunds	percent of total	percent of gain or loss
1.	61	1	1.60 %	
2.	75	2	2.80	
3.	222	4	1.80	
4.	62	0	0.00	
5.	179	2	1.10	
6.	79	0	0.00	
7.	193	1	.50	
8.	254	2	.80	
9.	80	0	0.00	
10.	114	1	.90	
11.	128	1	.80	
<hr/>				
Totals:	1,447	14	.90%	

Last Papers

1.	170	5	2.90 %	+ 1.30
2.	51	1	2.00	- .30
3.	72	4	5.50	+ 3.70
4.	92	0	0.00	0.00
5.	142	2	1.40	+ 3.00
6.	121	4	3.40	+ 3.40
7.	165	2	1.20	+ .70
8.	81	4	4.90	+ 4.10
9.	115	3	2.60	+ 2.60
10.	204	0	0.00	- .90
11.	73	0	0.00	- .80
<hr/>				
Totals:	1,286	25	3.80 %	+ 2.70

TABLE IVb

Participle and Gerund Usage

BEST COPY AVAILABLE

EXPERIMENTAL GROUP

First Papers

Student #	total words	present participles and gerunds	percent of total	percent of gain or loss
1.	257	3	1.20 %	
2.	173	15	8.70	
3.	381	7	1.80	
4.	250	10	4.00	
5.	248	3	1.20	
6.	127	4	3.16	
7.	170	4	2.35	
8.	290	2	.65	
9.	169	0	0.00	
10.	246	5	2.00	
11.	114	5	4.39	
12.	100	3	3.00	
Totals:	2,575	61	2.40	

Last Papers

1.	51	4	7.80 %	+ 6.60
2.	68	8	11.80	+ 3.10
3.	495	14	2.00	+ .20
4.	66	6	10.00	+ 6.00
5.	61	3	4.90	+ 3.80
6.	45	5	11.10	+ 7.94
7.	184	2	1.90	- .45
8.	70	6	8.52	+ 7.87
9.	86	0	0.00	0.00
10.	41	5	12.30	+10.30
11.	51	7	13.65	+ 9.26
12.	66	2	3.30	+ .30
Totals:	1,284	62	4.80%	+2.40